

# (12) UK Patent Application (19) GB (11) 2 342 248 (13) A

(43) Date of A Publication 05.04.2000

(21) Application No 9821324.2

(22) Date of Filing 02.10.1998

(71) Applicant(s)  
**Chih-Tien Tang**  
No 63 Chin Tun Street, Hua Tan Village,  
Hua Tan Hsian, Chang Hua Hsien, Taiwan

(72) Inventor(s)  
**Chih-Tien Tang**

(74) Agent and/or Address for Service  
**A R Davies & Co**  
27 Imperial Square, CHELTENHAM, Gloucestershire,  
GL50 1RQ, United Kingdom

(51) INT CL<sup>7</sup>  
H04M 7/00 , H04N 1/00

(52) UK CL (Edition R )  
H4K KOA KOD2

(56) Documents Cited  
GB 2309615 A WO 97/28628 A1

(58) Field of Search  
UK CL (Edition Q ) H4K KOA KOD2  
INT CL<sup>6</sup> H04M , H04N  
ONLINE: WPI

(54) Abstract Title  
**Internet communication**

(57) A non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission comprises a signal processing unit 11, a signal memory unit 13 connected with the signal processing unit, an identification data input unit 15 connected with the signal processing unit for entering data and instructions to control the action of the signal processing unit for entering the data to be transmitted, a signal conversion unit 19 connected with the signal processing unit for connecting the system with the internet and for transceiving the signals, and a received data output unit 21 connected with the signal processing unit for outputting the data stored in the signal memory unit.

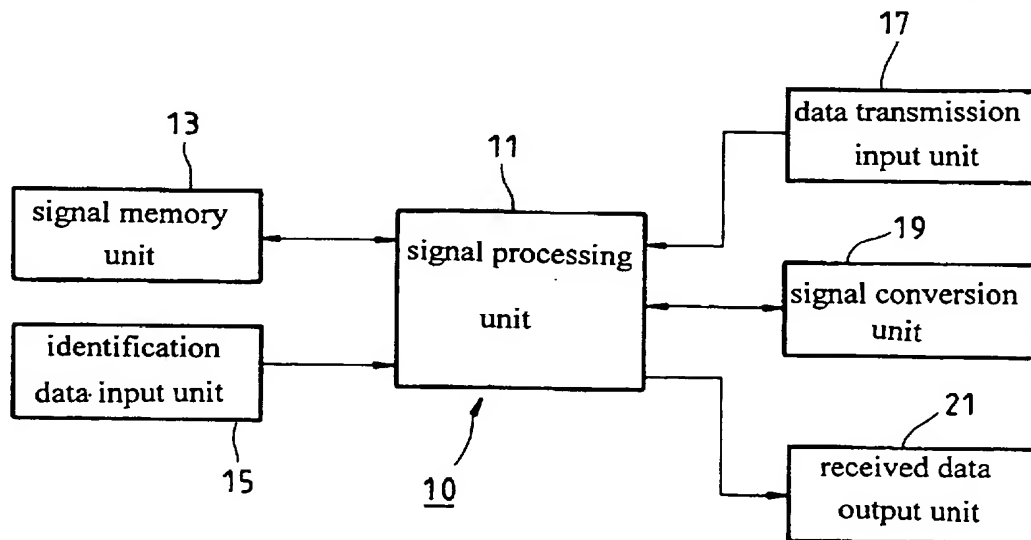


FIG. 1

GB 2 342 248 A

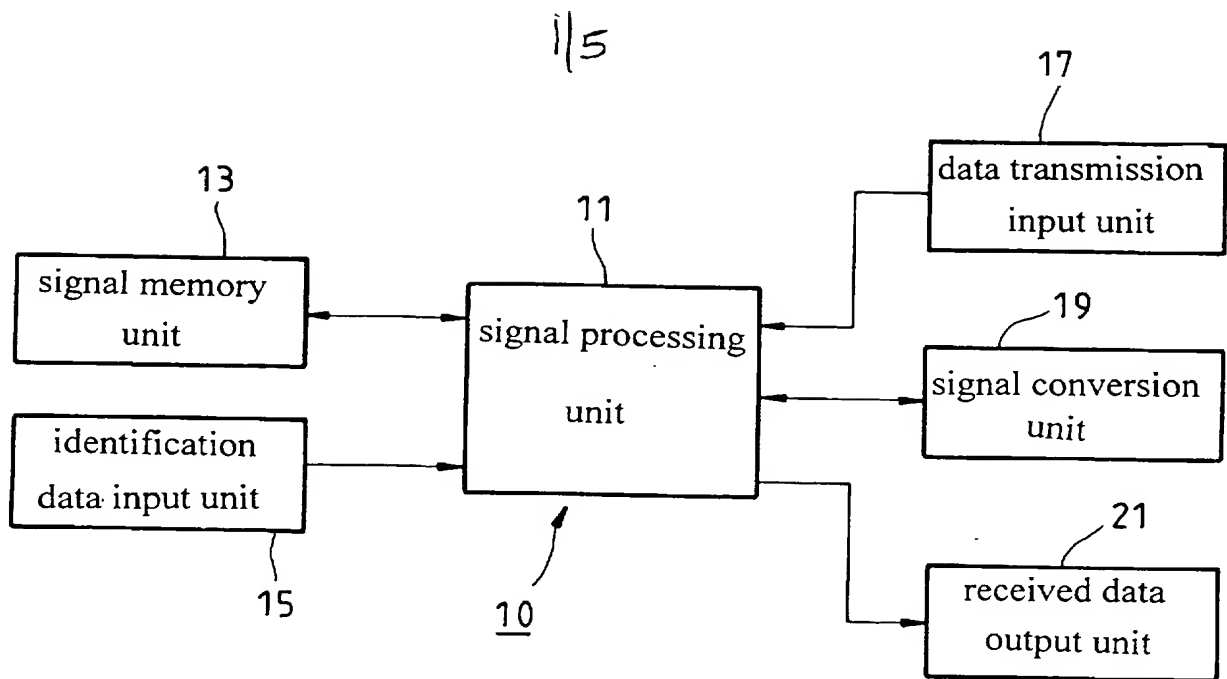


FIG. 1

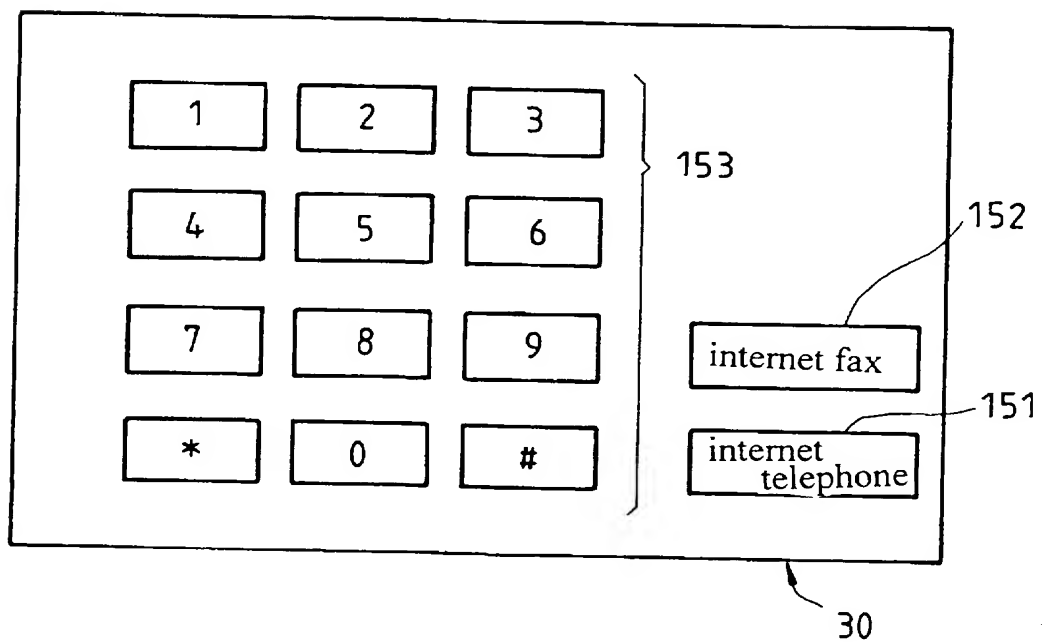


FIG. 2

2/5

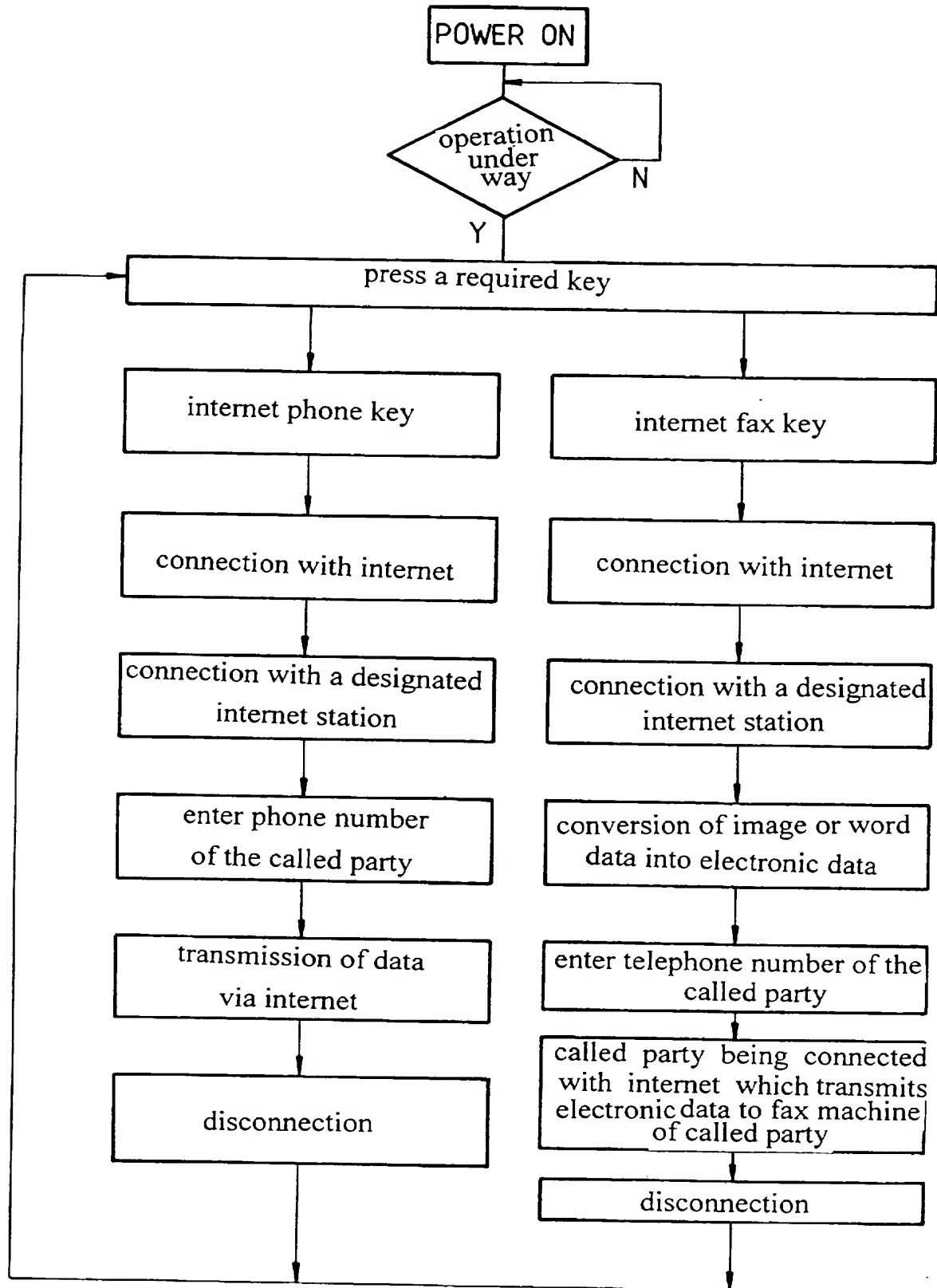


FIG. 3

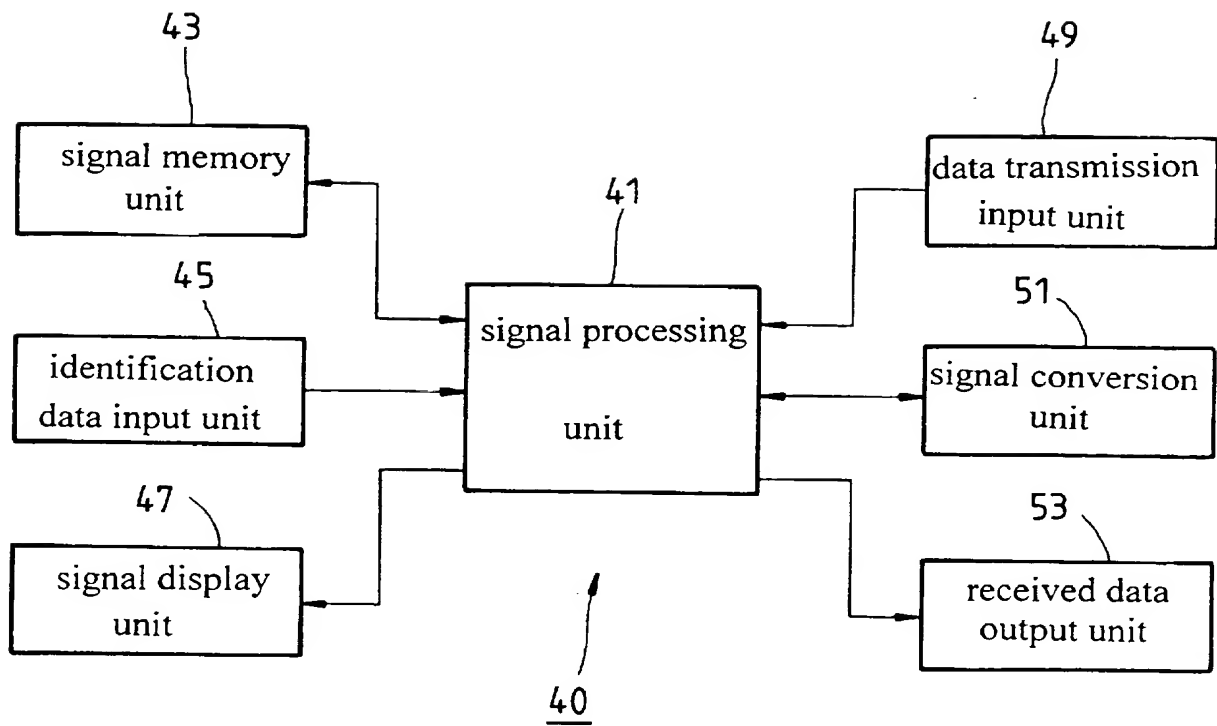


FIG. 4

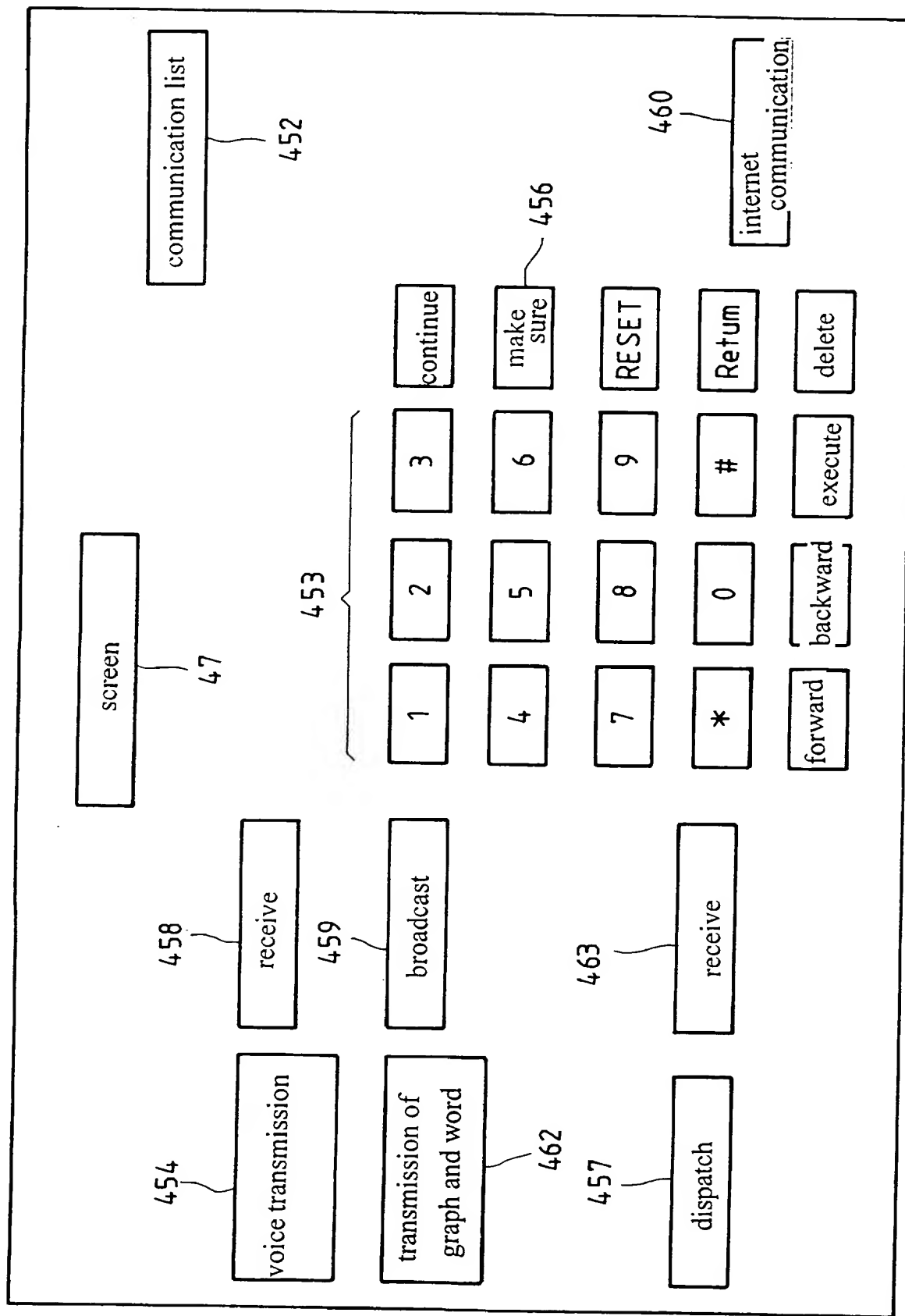


FIG. 5 60

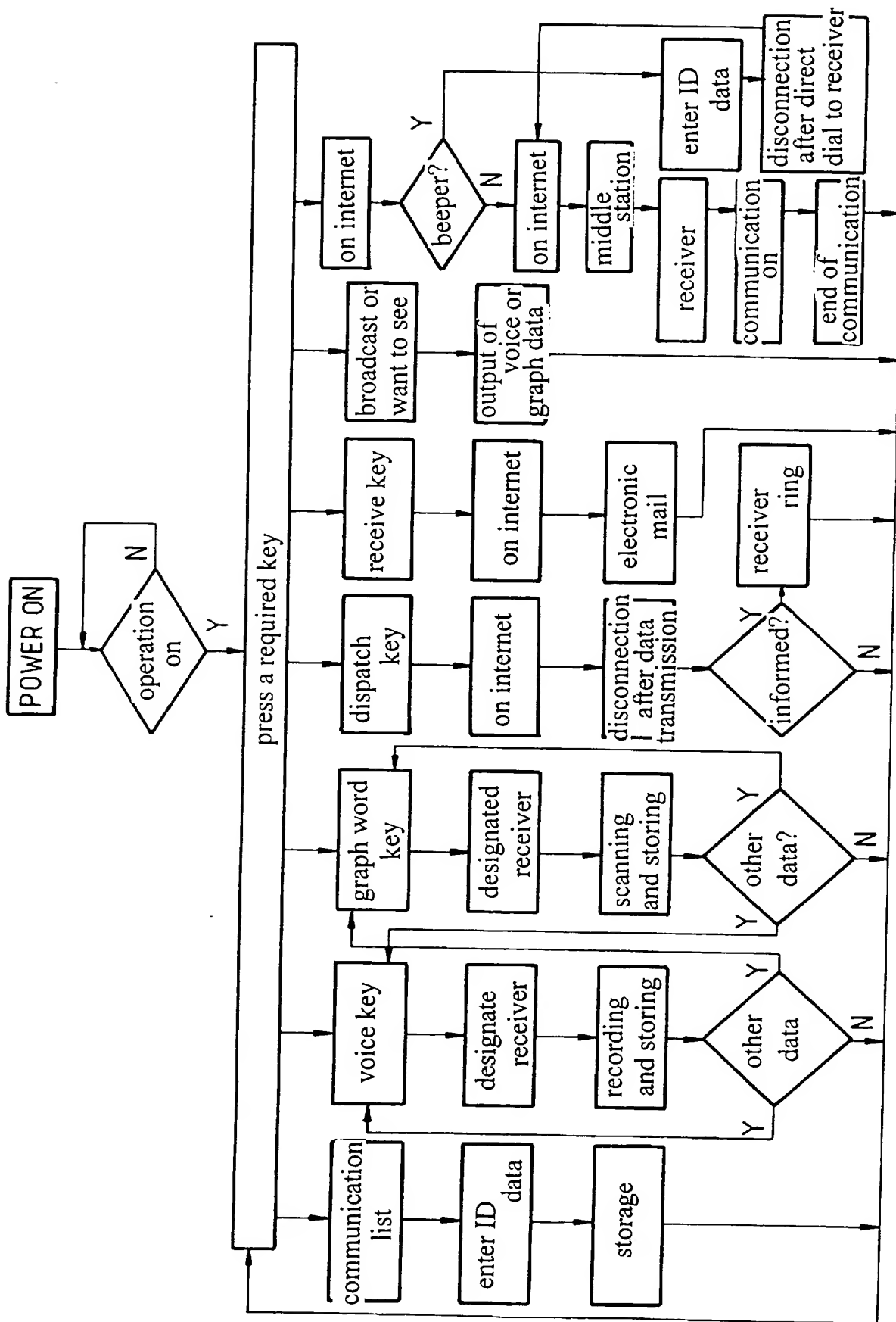


FIG. 6

**NON-COMPUTER PROCESSING SYSTEM USING INTERNET  
TO TRANSCEIVE VOICE, GRAPH AND WORD FOR INSTANT  
VOICE COMMUNICATION AND FAX TRANSMISSION**

**FIELD OF THE INVENTION**

The present invention relates generally to a data transmission system, and more particularly to a non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission.

**BACKGROUND OF THE INVENTION**

According to the prior art technology, it is necessary to prepare at least one set of computer and a data machine to attain the data transmission through the internet. As soon as the data machine is connected with the internet, the data can be transmitted from the computer to the internet via the data machine. The current multimedia computer is capable of converting the data of voice, graph and word into electronic signals via the peripheral equipments, such as microphone and scanner. The electronic signals are then kept in the storage device (such

as hard disk drive) of the computer in the form of file such that the electronic signals can be transmitted on the internet, and that the electronic signals are converted into voice, graph or word by voice card, printer, or screen.

The current internet provides the service of direct communication. This is the application of the voice data transmission of the internet. Both parties of the direct communication are connected with an intermediate network station which provides the internet communication service and transceives the voice data of both parties. Such an internet communication service is similar to the telecommunication.

However, the internet communication service is not cost-effective in view of the fact that the internet communication service calls for the use of a computer, a data machine, and peripheral equipments. In addition, the operation of the internet communication service is relatively complicated and must be therefore carried out by the competent technicians.

## **SUMMARY OF THE INVENTION**

It is therefore the primary objective of the present invention to provide a non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission. Through internet, both parties are connected to attain the voice communication as well as the fax transmission.



It is another objective of the present invention to provide a non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission. The system of the present invention is simple in construction and cost-effective.

It is still another objective of the present invention to provide a non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission. The system of the present invention can be easily operated by the amateur.

In keeping with the principle of the present invention, the foregoing objectives of the present invention are attained by the non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission. The system consists of a signal processing unit, a signal memory unit connected with the signal processing unit to store the data, a data input unit connected with the signal processing unit for entering the numerical and the word data as well as the control signal for controlling the action of the signal processing unit, a transmission data input unit connected with the signal processing unit for entering the data to be transmitted and stored in the signal memory unit, a signal conversion unit connected with the signal processing unit for connecting with the internet and converting the data stored in the signal memory unit into signals, as well as the signals received from the outside into the data which are then stored in the signal memory unit via the signal processing unit, and a received data output unit connected with the signal processing unit for delivering the data stored in the signal memory unit to a user.

The features and the functions of the present invention will be

more readily understood upon a thoughtful deliberation of the following detailed description of the preferred embodiments of the present invention with reference to the accompanying drawings.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 shows a block diagram of the preferred embodiment of the present invention.

FIG. 2 shows a control panel of the preferred embodiment of the present invention.

FIG. 3 shows a process flow of the preferred embodiment of the present invention.

FIG. 4 shows a simplified block diagram of another preferred embodiment of the present invention.

FIG. 5 shows a control panel of the another preferred embodiment of the present invention.

FIG. 6 shows a process flow of the another preferred embodiment of the present invention.

## **DETAILED DESCRIPTION OF THE INVENTION**

As shown in FIG. 1, a non-computer processing system 10 of the present invention is composed of a signal processing unit 11, a signal memory unit 13 connected with the signal processing unit 11, an identification data unit 15, a transmitted data input unit 19, a signal conversion unit 21, and a received data output unit 23.

The signal processing unit 11 is a programmed microprocessor. The signal memory unit 13 is a dynamic random access memory (DRAM) for storing the electronic signals. The recognized data input unit 15 is a key set with its keys being arranged on a machine control panel 30, as shown in FIG. 2. The identification data input unit 15 is used to enter the numerical characters as well as the control signals for controlling the actions of the signal processing unit 11. The transmitted data input unit 19 is a microphone mounted on the control panel 30 for converting the voice data to be transmitted into the electronic signals, which are stored in the signal memory unit 13 via the signal processing unit 11. The signal conversion unit 21 is a modem, which is controlled by the signal processing unit 11 for converting the data stored in the signal memory 13 into the electronic signals. The modem can also received the electronic signals from the outside source such that the electronic signals are converted into the data, which are stored in the signal memory unit 13. The received data output unit 23 is a loud speaker, which is mounted on the control panel 30 and used to convert the data stored in the signal memory 13 into voice.

Now referring to FIGS. 2 and 3, before operation, the mandatory internet service data, such as account number of the user, the user's secret code, electronic mail address, the dial telephone number of ISP,

and the address of the internet station serving the user, are entered by the service provided such that the internet service data of the user are stored in the signal memory unit 13. When the user wants to use his or her telephone through the internet, the user presses the "internet telephone" key 151 located on the control panel 30. As a result, the signal processing unit 11 controls the signal conversion unit 21 such that the signal conversion unit 21 is connected with an internet station provided the internet communication service. Thereafter, the user enters the telephone number of the called party on the numeral key set 153 of the control panel 30, thereby resulting in the control of the signal conversion unit 21 by the signal processing unit 11. The telephone number of the called party is thus transmitted to the internet station, which is then in contact with the telephone of the called party via the telephone line. The received data input unit 19 is controlled by the signal processing unit 11 to receive the voice source of the calling party and to convert the voice source into the electronic signals, which are stored temporarily in the signal memory unit 13 serving as a memory buffer. The signal conversion unit 12 is once again controlled by the signal processing unit 11 so as to transmit the electronic signals to the internet station, which makes use of the conversion program to convert the electronic signals into the voice source data which are then delivered to the telephone receiver of the telephone set of the called party. In the meantime, the voice source of the called party is converted by the internet station into the electronic signals, which are then transmitted to the calling party through the data conversion unit 21 and are stored temporarily in the signal memory unit 13. The received data output unit 23 is again controlled by the signal processing unit 11 so as to convert the temporarily-stored electronic signals into the voice source, which is then broadcast. The voice communication process is thus completed.

In the embodiment of the present invention, the charge for the telephone call may be calculated on the basis of the city call rates, if the internet station and the called party are located in the area of the same code. If the internet station and the called party are located in areas of different codes, the toll may be collected on the basis of the long-distant call rates.

The data transmission input unit 19 and the received data output unit 23 may be mounted in the telephone receiver to facilitate the user to transceive the voice.

The data transmission input unit 19 of the embodiment of the present invention is not confined to the microphone as a voice source device and may be a scanner, a computer keyboard, a digital camera, or a scanning device of fax machine, which is connected through an appropriate interface. As a result, the data of image, graph and word can be converted into the electronic signals, which are then transmitted by the internet station to the called party. The identification data input unit 15 is further provided with an "internet fax" key 152. When the key 152 is pressed, the signal conversion unit 21 is controlled by the signal processing unit 11 to become connected with a predetermined station of the internet. The transmitted data input unit 19 is activated such that the data of graph and word are scanned and converted into the electronic signals, which are transmitted to the internet station. In the meantime, the telephone number of the called party is entered by the numeral key set 153 and is transmitted to the internet station by the signal conversion unit. The fax machine of the called party is activated by the internet station such that the electronic signals are transmitted to the fax machine of the called party to bring about the transmission and the reproduction of

graphic matter.

Now referring to FIG. 4, another preferred embodiment of the present invention is shown to be different from the first preferred embodiment of the present invention in that the former is further composed of a signal displaying unit 47, which is in fact an LCD screen mounted on the control panel 60 of a machine body such that it is controlled by the signal processing unit 41 in conjunction with the identification data input unit 45 which is mounted on the control panel 60, as shown in FIG. 5. The second preferred embodiment of the present invention is provided with a keyboard which is used to enter the numeral characters, English letter characters, and symbol characters, etc.

As shown in FIGS. 5 and 6, the user's identification data, such as the user's account number, title, secret code, E-mail address, and the dial phone number of ISP, are entered by the supplier and are stored in the signal memory unit 43.

The user may set up on his own the identification data of the called party by pressing "communication list" key 452 for entering the data into the signal processing unit 41 by means of the character key set 453 of the control panel 30. The data are then stored in the signal memory unit 43. A batch of data may be coded first by means of the key set 453 to facilitate the entry of the data.

In operation, the "voice transmission" key 454 is first pressed to activate the signal processing unit 41. As the code or E-mail address of the called party are entered by means of the character key set 453, the recording process is ready to work. The user may use the transmission

data input unit 49 to convert the voice signals into the electronic signals. According to the time of this system, a string of time characters is brought about for assigning the data with a file title. As the recording process is completed, the “make sure” key 456 is pressed, thereby resulting in the storage of the data file in the signal memory unit 43. For recording a plurality of batches of data, the “voice transmission” key 454 is pressed to repeat the recording process described above.

The transmission of the recorded voice data to the called party is initiated by pressing the “dispatch” key 457 of the control panel 60. The signal conversion unit 51 is controlled by the signal processing unit 41 to connect with the internet such that the data stored in the signal memory unit 43 are transmitted to the E-mail address of the receiver. The data take the form of the attached file of the E-mail to form the dispatch. As the dispatch is completed, the signal conversion unit 51 is controlled by the signal processing unit 41 to become disconnected.

The receiver presses the “receive” key 458 of the control panel 60 to activate the signal processing unit 41, thereby resulting in the connection of the signal conversion unit 51 with the internet. The E-mail is then received in the E-mail box and is stored in the signal memory unit 43. The signal conversion unit 51 is thus instructed by the signal processing unit 41 to become disconnected with the internet.

The receiver may press the “broadcast” key 459 of the control panel to listen to the received data. The received data are read by the signal processing unit 41 from the signal memory unit 43 the data are converted by the received data output unit 53 into the voice.

For direct conversation between two parties on the internet, an appointment must be made in advance. As the "internet conversation" key 460 of the control panel 60 is pressed at the designated time, the signal processing unit 41 is activated to instruct the signal conversion unit 51 to connect with the internet. The identification data of the receiver are entered by the identification data input unit 45. As connection is brought about, the voice data received by the transmitted data input units 49 of both parties are transmitted continuously via the internet such that the received data are broadcast by the received data output units 53 of both parties. The second preferred embodiment of the present invention is different from the first preferred embodiment of the present invention in that the called party of the latter may use an ordinary telephone set, and that the calling party of the latter is devoid of the signal displaying unit 47. In the input process of the second preferred embodiment, the signal displaying unit 47 is provided to enable the user to check the data that are entered. Both parties must be equipped with the system of the present invention. However, one of the two parties may be equipped with the system of the present invention, whereas other one of the two parties may be equipped with the computer.

The data transmission input unit 49 of the present invention is not confined to the microphone, which may be replaced with an image or word processing device. The received data output device 53 of the present invention may be a loud speaker, or a printer, fax machine, or screen. In operation, the "image word" key 462 of the control panel 60 is pressed to activate the signal processing unit 41 such that the image or word data are converted by the data transmission input unit 49 into the electronic signals, which are stored in the signal memory unit 43. The rest of the process is similar to the voice transmission process. The



receiver may press the “want to see” key 463 of the control panel 60 to activate the signal processing unit 41 to receive the image or word.

Upon completion of the transmission of data, the receiver will be alerted by rings, thanks to the signal processing unit 41 and the signal conversion unit 51. The receiver may press the “receive” key 458 to receive the message or image. The system of the present invention may be automatically or manually operated. Upon receiving the rings, the signal processing unit identifies the entry of data so as to instruct the signal conversion unit 51 to connect with the internet such that the received data are stored in the signal memory unit 43, and that the received data output unit 53 produces a voice signal to alert the receiver.

The system of the present invention may be provided with a “beep” function. The calling party presses “on internet” key 460 to enter the identification data of the called party by the identification data input unit 45. The signal conversion unit 51 is then activated by the signal processing unit 41 to connect with the called party. Upon completion of the connection, the sound signals (such as rings) are brought about before the disconnection. The system of the called party is so alerted as to produce a sound signal to alert the called party.

The signal memory unit 13 of the present invention may be DRAM, TAPE, Hard disk drive, SRAM, or registers.

The present invention has the following advantages over the prior art.

The operation of the present invention is simple and easy to learn

)  
to operate. The entire system is capable of transceive the data via the internet by a few keys or even by one key, by which the identification data input unit 15 is operated. The called party may be equipped with the system of the present invention, an ordinary telephone set, a fax machine, or a computer.

The system of the present invention is simple in construction and cost-effective, without using the expensive devices, such as screen, or hard disk drive, etc. The present invention can be made without the application of the leading edge technology of the computer science.

**WHAT IS CLAIMED IS:**

1. A non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission, said system comprising:

a signal processing unit;

a signal memory unit connected with the signal processing unit for storing data;

an identification data input unit connected with the signal processing unit for entering numerical characters, and control signals for controlling action of the signal processing unit;

a data transmission input unit connected with the signal processing unit for entering data to be transmitted and stored in the signal memory unit;

a signal conversion unit connected with the signal processing unit for connecting with internet and converting data stored in the signal memory unit into signals and outside signals into data which are then stored in the signal memory unit via the signal processing unit;

a received data output unit connected with the signal processing unit for outputting data stored in the signal memory unit.

2. The system as defined in claim 1, wherein the identification data input unit is located on a machine control panel.

3. The system as defined in claim 2, wherein the identification data input unit has an "internet phone" key and a numeral key for controlling operation of the signal processing unit.

4. The system as defined in claim 3, wherein the data transmission input unit is a microphone for converting sound signals into electronic signals; wherein the received data output unit is a loud speaker for converting the electronic signals into the sound.

5. The system as defined in claim 4, wherein the signal processing unit activates the signal conversion unit to become connected with internet at the time when the "internet phone" key is pressed, the telephone number of a called party being entered by the numeral key set such that the telephone number is transmitted to an internet station of the internet by the signal conversion unit, and that the telephone set of the called party is activated by the internet station so as to bring about a two-way communication between a calling party and the called party.

6. The system as defined in claim 5, wherein the data transmission input unit is controlled by the signal processing unit as soon as the calling party is connected with the called party, thereby resulting in the conversion of voice into electronic signals, which are transmitted to the internet station by the signal conversion unit and are then converted into sound to be transmitted to the receiver of the called party, the internet station converting sound of the called party into electronic signals which are transmitted to the calling party via the data conversion unit such that the electronic signals are converted into sound by the received data output unit controlled by the signal processing unit.

7. The system as defined in claim 2, wherein the identification data unit comprises an "internet fax" key and a numeral key set.

8. The system as defined in claim 7, wherein the data transmission input unit is a scanner for converting graph and word data into electronic signals; wherein the signal processing unit is activated to control the signal conversion unit at the time when the "internet fax" key is pressed, so as to become connected with an internet station such that graph word data are converted by the scanner and transmitted to the internet station, and that the telephone number of a called party is entered by the numeral key set, and that the fax machine of the called party is activated by the internet station via a telephone line, and further that the electronic signals are transmitted to the fax machine of the called party.

9. The system as defined in claim 1, wherein the signal conversion unit is a modem.

10. The system as defined in claim 1 further comprising a signal display unit connected with the signal processing unit and controlled by the signal processing unit to display information, the identification data input unit being intended to enter numerals, English letters, symbols, etc., and control signals for controlling actions of the signal processing unit.

11. The system as defined in claim 10, wherein the identification data input unit and the signal display unit are disposed on a machine control panel.

12. The system as defined in claim 11, wherein the identification data input unit has a "setting up communication list" key, a character key set for entering characters, a "voice transmission" key, a "make sure" key, a "dispatch" key, a "receive" key, and a "broadcast" key, with each key being capable of controlling the signal processing unit to bring about operational procedures.

13. The system as defined in claim 12, wherein the signal processing unit is ready to key in the identification data of a called party and to store the identification data in the signal memory unit at the time when the "setting up communication list" key is pressed.

14. The system as defined in claim 12, wherein the signal processing unit is ready to designate the called party and to begin recording at the time when the "voice transmission" key is pressed, the data transmission input unit intended to receive outside voice data and convert the voice data into electronic signals, which are processed by the signal processing unit and are then stored in the signal memory unit, the recording being brought to completion at the time when "make sure" key is pressed.

15. The system as defined in claim 12, wherein the signal conversion unit is controlled by the signal processing unit so as to be connected with internet at the time when the "dispatch" key is pressed, thereby resulting in the transmission of the data stored in the signal memory unit to E-mail address of a receiver.

16. The system as defined in claim 15, wherein the signal conversion unit is controlled by the signal processing unit to dial the

system of the receiver after the transmission data of a sender are dispatched to the receiver, a predetermined signal being dispatched from the system of the sender to the system of the receiver such that the predetermined signal is acknowledged by the system of the receiver to produce sound to alert the receiver.

17. The system as defined in claim 12, wherein the signal conversion unit is controlled by the signal processing unit to become connected with the internet at the time when the "receive" key is pressed, thereby resulting in the receipt of electronic mail from electronic mail box of the receiver, the electronic mail being stored subsequently in the signal memory unit.

18. The system as defined in claim 17, wherein the signal processing unit begins reading the received data from the signal memory unit at the time when the "broadcast" key is pressed, thereby resulting in the conversion of the data into the voice by the received data output unit.

19. The system as defined in claim 12, wherein the data transmission input unit is a microphone for receiving and converting outside voice signals into electronic signals; and wherein the received data output unit is a loud speaker for converting the electronic signals into audible sound.

20. The system as defined in claim 11, wherein the identification data input unit further has a "graph and word transmission" key and a "watch" key.

21. The system as defined in claim 20, wherein the data

transmission input unit is controlled by the signal processing unit at the time when the "graph-word transmission" key is pressed, thereby resulting in the conversion of graph and word into electronic signals, which are stored in the signal memory unit.

22. The system as defined in claim 20, wherein the received data output unit is controlled by the signal processing unit to convert the data stored in the signal memory unit into graph and word.

23. The system as defined in claim 20, wherein the data transmission input unit is a scanner for converting graph-word data into electronic signals; and wherein the received data output unit is a printer for converting the electronic signals into graph and word.

24. The system as defined in claim 20, wherein the data transmission input unit is a digital camera for converting image into electronic signal; and wherein the received data output unit is a printer for converting the electronic signal into the image.

25. The system as defined in claim 20, wherein the data transmission input unit is a scanning device of a fax machine; and wherein the received data output unit is a printing device of the fax machine capable of simultaneous conversions of the graph-word data into the electronic signals and vice versa.

26. The system as defined in claim 20, wherein the data transmission input unit is a scanner for converting graph-word data into electronic signal; and wherein the received data output unit is a computer screen for converting the electronic signals into the graph and the word.



27. The system as defined in claim 10, wherein the identification data input unit has an "internet conversation" key and a character key set.

28. The system as defined in claim 27, wherein the signal conversion unit is controlled by the signal processing unit to become connected with internet at the time when the "internet conversation" key is pressed, such that the identification data of a called party are entered by the character key set to be in communication with the called party via the internet, and that the voice data of the calling party and the called party are continuously exchanged via the internet.

29. The system as defined in claim 28, wherein the signal conversion unit is controlled by the signal processing unit to dial directly the system of the called party at the time when the "internet conversation" key is pressed and when the identification data of the called party are entered by the character key set, thereby resulting in a predetermined signal at the called party to actuate the signal processing unit of the system of the called party so as to bring about a two-way communication via the internet.

30. The system as defined in claim 10, wherein the signal display unit is an LCD screen for displaying the input state of the identification data input unit and the information.

31. The system as defined in claim 10, wherein the signal conversion unit is a modem.

32. A non-computer processing system using internet to transceive voice, graph and word for instant voice communication and fax transmission substantially as hereinbefore described with reference to Figures 1 to 3, or Figures 4 to 6, of the accompanying drawings.



Application No: GB 9821324.2  
Claims searched: All

Examiner: Al Strayton  
Date of search: 24 February 1999

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): H4K: KOA; KOD2

Int Cl (Ed.6): H04M, H04N

Other: ONLINE: WPI

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2 309 615 A (FIRECREST)	
A	WO 97/28628 A1 (ADVANCED TECH.)	

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.

E Patent document published on or after, but with priority date earlier than, the filing date of this application.